roots, before being removed by the gardeners. However, this seedling started only a couple of feet above the ground, so its roots soon found their way into the soil, and its period of dependence on the scanty supply of soil and moisture in the petiolar cups was comparatively short.

It would be interesting to know something about the fluctuations in the available moisture in these cups, and whether the perennials die on account of water shortage or through the exhaustion of the essential mineral elements entrapped in the

petiolar crevices.

The following list includes only those species observed growing on the date palms on the Stanford campus and in park ways near my home. A more extensive survey might expand this list considerably.

Acacia retinodes Schlecht. Ailanthus glandulosa Desf. Anagallis arvensis L. Avena fatua L. Bromus mollis L. Bromus rigidus Roth. Cupressus Macnabiana Murr. Cupressus macrocarpa Dryopteris arguta (Kaulf.) Watt. Eriobotrya japonica Lindl. Echinocystis fabacea Naud. Festuca megalura Nutt. Festuca myuros L. Hordeum murinum L.

Montia perfoliata (Donn) Howell Phoenix canariensis Hort. Pinus radiata Don Pinus Sabiniana Dougl. Prunus communis L. Prunus ilicifolia Walp. Polypodium californicum Kaulf. Quercus agrifolia Née Pyracantha sp. Sambucus glauca Nutt. Silene gallica L. Solanum nigrum L. Sonchus oleraceus L. Stellaria media (L.) Cyr. Thuya orientalis L. Verbena prostrata R. Br.

Dudley Herbarium, Stanford University, July, 1938.

ADDITIONS TO OUR KNOWLEDGE OF THE FLORA OF MOUNT BAKER, WASHINGTON

W. C. MUENSCHER

Mount Baker, with its cap of perpetual ice and snow, attaining a height of 10,750 feet above sea level, dominates the landscape of Whatcom County, Washington, the northwest corner of the United States. In 1929 St. John and Hardin (3) published a flora of this area reporting its known flora as consisting of 334 species and varieties.

As a result of the writer's botanical explorations of Mount Baker, made between 1910 and 1937, its flora is well represented in the herbarium of Cornell University. The present list of vascular plants consisting of additions to the known flora of the Mount Baker region, as delimited by St. John and Hardin, is largely based upon the writer's observations and collections. A record of the occurrence of a few of these species has been published previously (1, 2). Mr. J. W. Thompson of Seattle, Washington, has published records of seven species (4, 5, 6) and has communicated recently by letter the occurrence of 18 additional species. With the exception of Mr. Thompson's records, the present list is based entirely upon collections deposited in the herbarium of Cornell University. Introduced as well as native species are included.

The present list increases the known plants of the region, as published by St. John and Hardin, by 13 families, 90 genera and 228 species, an increase by 68 per cent of the previously reported flora. At least forty weeds occur, most of which have been introduced in openings along the lower trails and few roads that penetrate the area. The presence of so many introduced species indicates that the flora of the region, although still mostly in a primitive state, is no longer as isolated as formerly, even though

it is located in a national forest.

Acknowledgment is due to Professor K. M. Wiegand for assistance in the determinations in several critical genera and to Dr. R. T. Clausen who determined the species of *Botrychium*.

POLYPODIACEAE

ASPLENIUM TRICHOMANES L. Rocky slopes in lower forest.

ASPLENIUM VIRIDE L. Moist ledges near timber line.

CHEILANTHES GRACILLIMA D. C. Eaton. Mt. Hermann, J. W. Thompson.

CRYPTOGRAMMA DENSA (Brack.) Diels. Rocky ledges near timber line.

DRYOPTERIS PHEGOPTERIS (L.) C. Chr. At base of Panorama Dome, J. W. Thompson.

POLYSTICHUM LEMMONII Underw. Rocky ledges above timber line.
PTERIDIUM AQUILINUM (L.) Kuhn. var. LANUGINOSUM (Bong.) Fern. Common on lower slopes.

Woodsia scopulina D. C. Eaton. Mt. Hermann, J. W. Thompson.

OPHIOGLOSSACEAE

Botrychium lanceolatum (Gmel.) Angstr. Alpine meadows.
Botrychium Lunaria (L.) Swartz. Alpine meadows.
Botrychium multifidum (Gmel.) Rupr. subsp. silaifolium (Presl) Claus. Moist banks about mountain meadows.

EQUISETACEAE

Equisetum hyemale L. Springy slopes in lower forest. Equisetum limosum L. Marshy banks of streams and ponds.

LYCOPODIACEAE

LYCOPODIUM ANNOTINUM L. Moist slopes in the lower forest. LYCOPODIUM OBSCURUM L. Dry exposed ridge, Sulphur Creek. LYCOPODIUM SELAGO L. Among mosses in lower forest.

SELAGINELLACEAE

SELAGINELLA WALLACEI Hier. Dry rocky slopes near timber line.

ISOETACEAE

Isoetes echinospora Dur. var. Braunii (Dur.) Englm. In shallow water, Baker

PINACEAE

PICEA SITCHENSIS (Bong.) Traut. and Mey. Infrequent in lower forest along Baker River and Swift Creek.
PINUS CONTORTA Dougl. Dry burned over slope near Sulphur Creek.

Турнаселе

TYPHA LATIFOLIA L. Marshy shores of Baker Lake.

SPARGANIACEAE

SPARGANIUM MULTIPEDUNCULATUM (Morong) Rydb. Baker Lake; Baker River.

POTAMOGETONACEAE

POTAMOGETON AMERICANUS Cham. and Schlecht. Baker River near Baker Lake. POTAMOGETON EPIHYDRUS Raf. Baker Lake; Baker River. Potamogeton tenuifolius Raf. Baker Lake; Baker River.

GRAMINEAE

AGROPYRON TRACHYCAULUM (Link) Steud. Dry meadows, Skyline Ridge. AGROSTIS THURBERIANA Hitchc. Alpine meadows, J. W. Thompson. AIRA CARYOPHYLLEA L. Common on dry soil in openings in the lower forests. Bromus Ciliatus L. Moist banks.
Bromus Tectorum L. A weed about Glacier.

CALAMAGROSTIS CANADENSIS (Michx.) Beauv. var. scabra (Presl) Hitchc. Wet meadows.

DACTYLIS GLOMERATA L. Introduced along roads, J. W. Thompson. Elymus glaucus Buckl. Meadow on Skyline Ridge.

FESTUCA RUBRIA L. Dry slopes.
FESTUCA SUBULATA Trin. Baker Lake region.
FESTUCA SUPINA Schur. Alpine meadows.
GLYCERIA ELATA (Nash) Hitchc. Swampy ground along lower streams.

HOLCUS LANATUS L. A weed along the lower roads and trails.

MUHLENBERGIA FILIFORMIS (Thurb.) Rydb. Near Austin Pass, J. W. Thompson. PHLEUM PRATENSE L. Introduced along roads and trails, J. W. Thompson.

POA ALPINA L. On ledges in alpine meadows. POA ANNUA L. Baker Lake region.

POA ARCTICA R. Br. Heliotrope Ridge, J. W. Thompson.
POA EPILIS Scribn. Among rocky ledges, Skyline Ridge. Poa gracillima Vasey. Common in alpine meadows. Poa palustris L. Introduced along roads, J. W. Thompson. Poa pratensis L. Introduced along roads, J. W. Thompson. Poa secunda Presl. Rocky alpine slopes, J. W. Thompson. Trisetum cernuum Trin. In moist forests.

CYPERACEAE

CAREX ABLATA Bailey. Wet meadows.

CAREX ARCTA Boott. Open areas in the lower forest.

CAREX FESTIVELLA Mack. Marshes and wet meadows.

CAREX LAEVICULMIS Meinsh. Wet meadows and along streams. CAREX LEPORINELLA Mack. Alpine meadow, Heliotrope Ridge.

CAREX LEPTOPEDA Mack. Marshy places in lower forests.

CAREX PIPERI Mack. Grassy slopes.

CAREX Rossii Boott. Meadows near timberline, J. W. Thompson.

CAREX ROSTRATA Stokes var. UTRICULATA (Boott) Bailey. In shallow water, Baker Lake.

CAREX SITCHENSIS Bailey. Sloughs and wet banks of lower streams. CAREX VESICARIA L. VAI. MAJOR BOOTT. Marshes about Baker Lake.

DULICHIUM ARUNDINACEUM (L.) Britt. Marshes about Baker Lake.

ELEOCHARIS OBTUSA (Willd.) Schultes. Meadow near Glacier, J. W. Thompson.

SCIRPUS MICROCARPUS Presl. Common in wet places in the lower forest.

JUNCACEAE

Juncus bufonius L. Along the lower trails.
Juncus macer S. F. Gray. Baker Lake region.
Luzula campestre (L.) DC. In open places in lower forests.

LILIACEAE

CAMASSIA QUAMASH (Pursh) Greene. Rare on grassy slopes. Disporum oreganum (Wats.) Benth. and Hook. Lower forest. DISPORUM SMITHII (Hook.) Piper. Baker Lake region. FRITILLARIA LANCEOLATA PURSh. Alpine meadows.
LLOYDIA SEROTINA (L.) Sweet. Moist ledges near timber line.

ORCHIDACEAE

CORALLORHIZA MACULATA Raf. Lower forest. HABENARIA DILATATA Pursh. In swamp about Baker Lake.

SALICACEAE

Populus tremuloides Michx. Lower slopes. Populus Trichocarpa Torr. and Gray. Baker Lake and along banks of larger

SALIX ARTICA Pall. var. SUBCORDATA (And.) Schn. Skyline Ridge, J. W. Thomp-

Salix canadensis Cock. Alpine meadows, 6000-7000 feet elevation. SALIX LASIANDRA Benth. var. LYALLII Sarg. Baker Lake region. SALIX NIVALIS Hook. Skyline Ridge, J. W. Thompson.

Salix petrophila Rydb. var. caespitosa (Kenn.) Schn. Skyline Ridge, J. W. Thompson.

SALIX SCOULERIANA Barr. Lower slopes. SALIX SITCHENSIS SANSON. Open forests.

BETULACEAE

Betula occidentalis Hook. Common on lower slopes.

LORANTHACEAE

ARCEUTHOBIUM CAMPYLOPODUM var. Tsugensis (Rosendahl) Gill. "witches brooms" associated with Tsuga heterophylla (Raf.) Sarg. and T. mertensiana (Bong.) Sarg.

POLYGONACEAE

Polygonum aviculare L. A weed along the lower trails. Polygonum Convolvulus L. A weed above the village of Glacier. Polygonum Douglasii Greene. Dry slopes. Polygonum Hydropiper L. Along ditch banks.

Polygonum Persicaria L. A weed along the lower roads.

Polygonum viviparum L. Alpine meadows above 6000 ft. elevation on Skyline Ridge. Also reported by J. W. Thompson. RUMEX CRISPUS L. A weed in the lower grassy places.

CHENOPODIACEAE

CHENOPODIUM ALBUM L. A weed about Glacier.

AMARANTHACEAE

AMARANTHUS RETROFLEXUS L. A weed about Glacier.

CARYOPHYLLACEAE

ARENARIA MACROPHYLLA Hook. Open places in lower forest. ARENARIA SERPYLLIFOLIA L. On sandy stream banks. Cerastium viscosum L. Grassy banks, lower forest. Cerastium vulgatum L. Grassy slopes, lower forest. Silene noctiflora L. A roadside weed about Glacier. Spergula Arvensis L. A weed along lower roads. Spergularia rubra (L.) Presl. Baker Lake. Stellaria media (L.) Cyrill. A common weed about Glacier.

RANUNCULACEAE

Anemone Lyallii Britt. On wooded ridges near timber line.
Delphinium Menziesii DC. Grassy slopes in lower meadows.
Ranunculus acris L. Roadside weed near Glacier.
Ranunculus aquatilis L. var. capillaceus DC. Submerged in Baker Lake.
Ranunculus Bongardii Greene. Lower forests.
Ranunculus Macounii Britt. Shore of Baker Lake.
Ranunculus orthorhynchus Hook. Table Mountain, J. W. Thompson 9738.
Ranunculus repens L. A weed along roads and trails.
Ranunculus reptans L. var. ovalis (Bigel.) Torr. and Gray. Shore of Baker Lake.

THALICTRUM OCCIDENTALE Gray. Common on moist slopes in meadows.

BERBERIDACEAE

ACHLYS TRIPHYLLA (Smith) DC. Common in lower forests. Berberis Aquifolia Pursh. Gravelly slopes above Glacier.

CRUCIFERAE

ARABIS GLABRA (L.) Bernh. Near Glacier, J. W. Thompson.
BARBAREA ORTHOCEROS VAR. DOLICARPA Fern. Boggy places along streams.
BRASSICA CAMPESTRIS L. A weed.
CAPSELLA BURSA-PASTORIS L. A weed along lower roads.
DRABA PREATTA Greene. Skyline Ridge, J. W. Thompson.
DRABA STENOLOBA Ledeb. High ridges and grassy ledges.
ERYSIMUM CHEIRANTHOIDES L. A weed along lower roads and trails.
LEPIDIUM MEDIUM Greene. Shore of Baker Lake.
RORIPA HISPIDA (Desv.) Britt. var. GLABRATA Lunell. Wet banks along lower streams and ponds.
SISYMBRIUM ALTISSIMUM L. A weed.
SISYMBRIUM OFFICINALE Scop. A weed.
SMELOWSKIA OVALIS Jones. Heliotrope Ridge, J. W. Thompson.
SUBULARIA AQUATICA L. Submerged in Baker Lake and Baker River.

CRASSULACEAE

SEDUM INTEGRIFOLIUM (Raf.) A. Nels. Moist ledges, 6000-7000 feet elevation, Skyline Ridge, Heliotrope Ridge.

SAXIFRAGACEAE

PHILADELPHUS GORDONIANUS Lindl. Open areas in lower forest.
RIBES SANGUINEUM PURSh. Burned-over lower slopes.
SAXIFRAGA OPPOSITIFOLIA L. Skyline Ridge, J. W. Thompson.
SAXIFRAGA RIVULARIS L. Skyline Ridge, J. W. Thompson.
SUKSDORFIA RANUNCULIFOLIA (Hook.) Engler. Moist cliffs, J. W. Thompson.
TIARELLA LACINIATA Hook. Lower forests of Baker Lake region. Perhaps this is only a form of T. trifoliata with deeply cleft leaves.

ROSACEAE

Fragaria vesca L. Grassy slopes near Glacier. Malus fusca (Raf.) Schneid. Swamps along lower streams. Physocarpus opulifolius (L.) Maxim. Baker Lake. Potentilla Glaucophylla Lehm. Alpine meadows.
Potentilla norvegica L. var. hirsuta (Michx.) Lehm. Grassy slopes.
Potentilla palustris L. Marsh about Baker Lake.
Prunus avium L. Escaped on burned-over slopes above Glacier.
Rosa Gymnocarpa Nutt. Common in open forests.
Rosa nutkana Presl. Baker Lake.
Rubus nivalis Dougl. On slopes in lower forest.
Spiraea Douglasii Hook. Baker Lake region.
Spiraea lucida Dougl. On gravelly slopes near Glacier.
Spiraea roseata Rydb. Springy bank, below Austin Pass.

LEGUMINOSAE

LATHYRUS PALUSTRIS L. VAR. MYRTIFOLIUS (Muhl.) Gray. Common on burnedover slopes.

LUPINUS LYALLII Gray. Exposed ridges about 7000 feet elevation.

MEDICAGO LUPULINA L. Escaped along the lower roads and trails.

TRIFOLIUM DUBIUM Smith. Escaped along the lower roads and trails.

TRIFOLIUM PRATENSE L. Escaped along the lower roads and trails.

TRIFOLIUM REPENS L. Escaped along the lower roads and trails.

VICIA AMERICANA Muhl. Baker Lake region.

GERANIACEAE

Erodium cicutarium (L.) L'Her. Along trails about Glacier. Geranium molle L. Grassy places along lower roads.

CALLITRICHACEAE

CALLITRICHE PALUSTRIS L. Baker Lake.

ACERACEAE

Acer glabrum Torr. var. Douglasii Hook. Moist slopes and edges of lower meadows.

RHAMNACEAE

RHAMNUS PURSHIANA DC. Open lower forest.

HALORRHAGIDACEAE

HIPPURUS VULGARIS L. Baker Lake; Baker River.

ONAGRACEAE

EPILOBIUM MINUTUM Lindl. Dry slopes and lower meadows. EPILOBIUM PANICULATUM Nutt. Open places, Baker Lake.

Umbelliferae

CICUTA OCCIDENTALIS Greene. In marshes along lower streams. DAUCUS CAROTA L. Roadside above Glacier.

OENANTHE SARMENTOSA Presl. Common in marshes in lower forest. OSMORRHIIZA OBTUSA (Coult. and Rose) Fern. Moist banks. PASTINACA SATUVA L. Along roadside, Glacier.

SANICULA SEPTENTRIONALIS Greene. Rocky slopes in meadows.

ERICACEAE

GAULTHERIA HUMIFUSA (Graham) Rydb. Rocky slope on Table Mountain. Moneses uniflora (L.) Gray. Lower forest. Monotropa uniflora L. Lower forest. Pyrola chlorantha Swartz. Lower forest.

PRIMULACEAE

LYSIMACHIA THYRSIFLORA L. Marshes about Baker Lake.

GENTIANACEAE

GENTIANA AMARELLA L. Grassy slopes in meadows.
MENYANTHES TRIFOLIATA L. Marshes about Baker Lake.

POLEMONIACEAE

Collomia Heterophylla Hook. Dry banks in lower forest. Collomia Linearis Nutt. Open places in lower meadows. Microsteris gracilis (Dougl.) Greene. Dry slopes.

HYDROPHYLLACEAE

NEMOPHILA PARVIFLORA Dougl. Along stream banks in lower forest.

LABIATAE

Galeopsis Tetrahit L. Baker Lake region.
Lycopus uniflorus Michx. Shores of Baker Lake.
Mentha arvensis L. var. canadensis (L.) Briq. Marshy places in lower forest.
Mentha arvensis L. var. glabrata (Benth.) Fern. Shores of Baker River.
Nepeta hederacea (L.) Trev. Baker Lake region.
Scutellaria lateriflora L. In marshes along the lower streams and lakes.
Stachys ciliata Dougl. In swamps in the lower forests.

SCROPHULARIACEAE

Collinsia parviflora Dougl. Open places in lower forests. Digitalis purpurea L. Naturalized along the lower roads and trails. Mimulus guttatus DC. In marshes along Baker Lake. Mimulus moschatus Dougl. Moist stream banks. Verbascum Thapsus L. A weed along roads. Veronica arvensis L. In grassy places along stream banks. Veronica scutellata L. In marshes in lower forests.

OROBANCHACEAE

OROBANCHE UNIFLORA (L.) Britt. Dry ledges in lower meadows.

PLANTAGINACEAE

PLANTAGO LANCEOLATA L. A weed along roads and trails.

RUBIACEAE

GALIUM APARINE L. In lower forests.
GALIUM CLAYTONI Michx. Moist lower forests.
GALIUM BIFOLIUM Wats. Among boulders in the higher meadows.

CAPRIFOLIACEAE

Lonicera ciliosa Pursh. Lower forests. Lonicera utahensis Wats. Rocky ledges in upper forest, to timber line. Symphoricarpus albus (L.) Blake. Open places on lower slopes.

COMPOSITAE

Adenocaulon bicolor Hook. Common in lower forests.

Antennaria Howellii Greene. Alpine meadows.

Antennaria Lanata (Hook.) Greene. On stony ridges above timber line.

Antennaria tomentella A. Nels. Alpine meadows.

Anthemis arvensis L. A weed in open places about Baker Lake.

Arctium minus Bernh. A roadside weed.

Arnica longifolia D. C. Eaton. On wet banks along Grouse Creek.

Chrysanthemum Leucanthemum L. var. pinnatifidum Lec. and Lam. A weed about Glacier.

Crepis Capillaris (L.) Wallr. In grassy places in the Baker Lake region.

CREPIS CAPILLARIS (L.) Wallr. In grassy places in the Baker Lake region.

ERIGERON ACRIS L. VAT. DEBILIS A. Gray. Skyline Ridge, J. W. Thompson.

ERIGERON ANNUUS (L.) Pers. Weed in grassy places between Glacier and Shuksan.

ERIGERON CANADENSIS L. Weed in grassy places between Glacier and Shuksan. ERIGERON PHILADELPHICUS L. Weed in grassy places between Glacier and Shuksan.

ERIOPHYLLUM LANATUM (Pursh) Forbes. On dry ledges in the lower meadows. GNAPHALIUM PURPUREUM Nutt. In gravelly soils, Baker Lake region. GNAPHALIUM ULIGINOSUM L. Along lower trails and stream banks. HYPOCHAERIS RADICATA L. A weed in grassy places about Glacier.

LACTUCA SCARIOLA L. VAR. INTEGRATA Gren. and Godr. A weed of disturbed places.

LACTUCA SPICATA (Lam.) Hitchc. Moist ground near Glacier, J. W. Thompson.

Madia Glomerata Hook. A weed along lower trails and roads.

Matricaria suaveolens (Pursh) Buch. A weed about Glacier.

Senecio Elmeri Piper. Rocky ledges near perpetual ice above Heliotrope Ridge.

SENECIO PAUCIFLORUS Pursh var. FALLAX Greenm. In open places in the lower

Senecio vulgaris L. A weed along the lower roads.

Solidago lepida DC. var. fallax Fern. Open places between Glacier and

Sonchus oleraceus L. A weed about Glacier and Baker Lake.

Taraxacum officinale Weber. A weed in grassy places along lower roads and trails.

Cornell University, Ithaca, New York, January, 1938.

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NOTES ON STACHYS RIGIDA NUTT.

CARL EPLING

While botanizing in Del Norte County, California, in 1935, the author found at two stations near Gasquet an unfamiliar form of Stachys, apparently referable to S. rigida Nutt. This has since been collected in two other places and since it appears to be a reasonably stable geographic race it is here described as new. The specimens cited are deposited in the Herbarium of the University of California at Los Angeles.

STACHYS RIGIDA subsp. lanata subsp. nov. Herba substricta altitudine 25-30 cm. superne frequenter ramosa caulibus pilis mollibus subretrorsis dense hirsutulis; foliorum laminis oblongis 5-7 cm. longis 12-24 mm. latis utrimque praesertim subtus lanatis mediorum petiolis 3-10 mm. longis elatis; spicis subcongestis lanatis 5-10 cm. longis.